#12/ K.T.
6/21

Raw Seg. listni

RECEIVED

JUN 2 1 2001

TECH CENTER 1600/2900

Input Set : A:\Scr21901.app
Output Set: N:\CRF3\05152001\I423035A.raw

ENTERED

```
 3 <110> APPLICANT: Joyce, Gerald F.
 4         Breaker, Ronald R.
 6 <120> TITLE OF INVENTION: ENZYMATIC DNA MOLECULES
 8 <130> FILE REFERENCE: SCR2190S
10 <140> CURRENT APPLICATION NUMBER: 09/423,035A
11 <141> CURRENT FILING DATE: 2000-01-13
13 <150> PRIOR APPLICATION NUMBER: PCT/US98/08677
14 <151> PRIOR FILING DATE: 1998-04-29
16 <150> PRIOR APPLICATION NUMBER: 60/045,228
17 <151> PRIOR FILING DATE: 1997-04-29
19 <160> NUMBER OF SEQ ID NOS: 131
21 <170> SOFTWARE: PatentIn Ver. 2.1
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 15
25 <212> TYPE: DNA
26 <213> ORGANISM: Artificial Sequence
28 <220> FEATURE:
29 <223> OTHER INFORMATION: Description of Artificial Sequence: 3' terminal
30       sequence
32 <400> SEQUENCE: 1
33 cggtaagctt ggcac                                               15
36 <210> SEQ ID NO: 2
37 <211> LENGTH: 20
38 <212> TYPE: DNA
39 <213> ORGANISM: Artificial Sequence
41 <220> FEATURE:
42 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The N
43       at position 8 is adenosine ribonucleotide.
45 <220> FEATURE:
46 <223> OTHER INFORMATION: Description of Artificial Sequence: substrate
48 <400> SEQUENCE: 2
49 tcactatnag gaagagatgg                                          20
52 <210> SEQ ID NO: 3
53 <211> LENGTH: 38
54 <212> TYPE: DNA
55 <213> ORGANISM: Artificial Sequence
57 <220> FEATURE:
58 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
60 <400> SEQUENCE: 3
61 acacatctct gaagtagcgc cgccgtatag tgacgcta                      38
64 <210> SEQ ID NO: 4
65 <211> LENGTH: 80
66 <212> TYPE: DNA
67 <213> ORGANISM: Artificial Sequence
69 <220> FEATURE:
70 <223> OTHER INFORMATION: Description of Artificial Sequence: oligomer
72 <220> FEATURE:
```

RAW SEQUENCE LISTING   DATE: 05/15/2001
PATENT APPLICATION: US/09/423,035A   TIME: 09:39:15

            Input Set : A:\Scr21901.app
            Output Set: N:\CRF3\05152001\I423035A.raw

     73 <221> NAME/KEY: misc_feature
     74 <222> LOCATION: (16)..(65)
     75 <223> OTHER INFORMATION: n is an equimolar mixture of G, A, T and C
     77 <400> SEQUENCE: 4
W--> 78 gtgccaagct taccgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
W--> 79 nnnnngtcgc catctcttcc   80
     82 <210> SEQ ID NO: 5
     83 <211> LENGTH: 28
     84 <212> TYPE: DNA
     85 <213> ORGANISM: Artificial Sequence
     87 <220> FEATURE:
     88 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
     89   at position 28 is adenosine ribonucleotide.
     91 <220> FEATURE:
     92 <221> NAME/KEY: misc_feature
     93 <222> LOCATION: (28)
     94 <223> OTHER INFORMATION: 2'3' cyclic phosphate.
     96 <220> FEATURE:
     97 <223> OTHER INFORMATION: Description of Artificial Sequence: cleavage
     98   produce
    100 <400> SEQUENCE: 5
W--> 101 gggacgaatt ctaatacgac tcactatn   28
    104 <210> SEQ ID NO: 6
    105 <211> LENGTH: 28
    106 <212> TYPE: DNA
    107 <213> ORGANISM: Artificial Sequence
    109 <220> FEATURE:
    110 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
    111   at position 28 is adenosine ribonucleotide.
    113 <220> FEATURE:
    114 <223> OTHER INFORMATION: Description of Artificial Sequence: primer
    116 <400> SEQUENCE: 6
W--> 117 gggacgaatt ctaatacgac tcactatn   28
    120 <210> SEQ ID NO: 7
    121 <211> LENGTH: 19
    122 <212> TYPE: DNA
    123 <213> ORGANISM: Artificial Sequence
    125 <220> FEATURE:
    126 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
    127   at position 8 is adenosine ribonucleotide.
    129 <220> FEATURE:
    130 <223> OTHER INFORMATION: Description of Artificial Sequence: substrate
    132 <400> SEQUENCE: 7
W--> 133 tcactatngg aagagatgg   19
    136 <210> SEQ ID NO: 8
    137 <211> LENGTH: 8
    138 <212> TYPE: DNA
    139 <213> ORGANISM: Artificial Sequence
    141 <220> FEATURE:

RAW SEQUENCE LISTING   DATE: 05/15/2001
PATENT APPLICATION: US/09/423,035A   TIME: 09:39:15

    Input Set : A:\Scr21901.app
    Output Set: N:\CRF3\05152001\I423035A.raw

```
    142 <221> NAME/KEY: misc_feature
    143 <222> LOCATION: (8)
    144 <223> OTHER INFORMATION: The n at position 8 is adenosine nucleotide.
    146 <220> FEATURE:
    147 <223> OTHER INFORMATION: Description of Artificial Sequence: template
    149 <400> SEQUENCE: 8
W--> 150 tcactatn                                              8
    153 <210> SEQ ID NO: 9
    154 <211> LENGTH: 30
    155 <212> TYPE: DNA
    156 <213> ORGANISM: Artificial Sequence
    158 <220> FEATURE:
    159 <223> OTHER INFORMATION: Description of Artificial Sequence: template
    161 <400> SEQUENCE: 9
    162 ccatctcttc ctatagtgag tccggctgca                      30
    165 <210> SEQ ID NO: 10
    166 <211> LENGTH: 15
    167 <212> TYPE: DNA
    168 <213> ORGANISM: Artificial Sequence
    170 <220> FEATURE:
    171 <223> OTHER INFORMATION: Description of Artificial Sequence: primer
    173 <400> SEQUENCE: 10
    174 gtgccaagct taccg                                      15
    177 <210> SEQ ID NO: 11
    178 <211> LENGTH: 43
    179 <212> TYPE: DNA
    180 <213> ORGANISM: Artificial Sequence
    182 <220> FEATURE:
    183 <223> OTHER INFORMATION: Description of Artificial Sequence: primer
    185 <400> SEQUENCE: 11
    186 ctgcagaatt ctaatacgac tcactatagg aagagatggc gac         43
    189 <210> SEQ ID NO: 12
    190 <211> LENGTH: 19
    191 <212> TYPE: DNA
    192 <213> ORGANISM: Artificial Sequence
    194 <220> FEATURE:
    195 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
    196         at position 8 is adenosine ribonucleotide.
    198 <220> FEATURE:
    199 <223> OTHER INFORMATION: Description of Artificial Sequence: substrate
    201 <400> SEQUENCE: 12
W--> 202 tcactatngg aagagatgg                                  19
    205 <210> SEQ ID NO: 13
    206 <211> LENGTH: 43
    207 <212> TYPE: DNA
    208 <213> ORGANISM: Artificial Sequence
    210 <220> FEATURE:
    211 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
    212         at position 28 is adenosine ribonucleotide.
```

RAW SEQUENCE LISTING   DATE: 05/15/2001
PATENT APPLICATION: US/09/423,035A   TIME: 09:39:15

Input Set : A:\Scr21901.app
Output Set: N:\CRF3\05152001\I423035A.raw

```
    214 <220> FEATURE:
    215 <223> OTHER INFORMATION: Description of Artificial Sequence: fixed
    216        substrate
    218 <400> SEQUENCE: 13
W-->219 gggacgaatt ctaatacgac tcactatngg aagagatggc gac              43
    222 <210> SEQ ID NO: 14
    223 <211> LENGTH: 50
    224 <212> TYPE: DNA
    225 <213> ORGANISM: Artificial Sequence
    227 <220> FEATURE:
    228 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
    229        domain
    231 <400> SEQUENCE: 14
    232 tcacacatct ctgaagtagc gccgccgtat gtgacgctag gggttcgcct           50
    235 <210> SEQ ID NO: 15
    236 <211> LENGTH: 50
    237 <212> TYPE: DNA
    238 <213> ORGANISM: Artificial Sequence
    240 <220> FEATURE:
    241 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
    242        domain
    244 <400> SEQUENCE: 15
    245 gggggggaacg ccgtaacaag ctctgaacta gcggttgcga tatagtcgta          50
    248 <210> SEQ ID NO: 16
    249 <211> LENGTH: 50
    250 <212> TYPE: DNA
    251 <213> ORGANISM: Artificial Sequence
    253 <220> FEATURE:
    254 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
    255        domain
    257 <400> SEQUENCE: 16
    258 cgggactccg tagcccattg ctttttgcag cgtcaacgaa tagcgtatta           50
    261 <210> SEQ ID NO: 17
    262 <211> LENGTH: 50
    263 <212> TYPE: DNA
    264 <213> ORGANISM: Artificial Sequence
    266 <220> FEATURE:
    267 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
    268        domain
    270 <400> SEQUENCE: 17
    271 ccaccatgtc ttctcgagcc gaaccgatag ttacgtcata cctcccgtat           50
    274 <210> SEQ ID NO: 18
    275 <211> LENGTH: 50
    276 <212> TYPE: DNA
    277 <213> ORGANISM: Artificial Sequence
    279 <220> FEATURE:
    280 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
    281        domain
    283 <400> SEQUENCE: 18
```

```
284 gccagattgc tgctaccagc ggtacgaaat agtgaagtgt tcgtgactat          50
287 <210> SEQ ID NO: 19
288 <211> LENGTH: 50
289 <212> TYPE: DNA
290 <213> ORGANISM: Artificial Sequence
292 <220> FEATURE:
293 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
294       domain
296 <400> SEQUENCE: 19
297 ataggccatg ctttggctag cggcaccgta tagtgtacct gcccttatcg          50
300 <210> SEQ ID NO: 20
301 <211> LENGTH: 50
302 <212> TYPE: DNA
303 <213> ORGANISM: Artificial Sequence
305 <220> FEATURE:
306 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
307       domain
309 <400> SEQUENCE: 20
310 tctgctctcc tctattctag cagtgcagcg aaatatgtcg aatagtcggt          50
313 <210> SEQ ID NO: 21
314 <211> LENGTH: 50
315 <212> TYPE: DNA
316 <213> ORGANISM: Artificial Sequence
318 <220> FEATURE:
319 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
320       domain
322 <400> SEQUENCE: 21
323 ttgcccagca tagtcggcag acgtggtgtt agcgacacga taggcccggt          50
326 <210> SEQ ID NO: 22
327 <211> LENGTH: 50
328 <212> TYPE: DNA
329 <213> ORGANISM: Artificial Sequence
331 <220> FEATURE:
332 <223> OTHER INFORMATION: Description of Artificial Sequence: DNA enzyme
333       domain
335 <400> SEQUENCE: 22
336 ttgctagctc ggctgaactt ctgtagcgca accgaaatag tgaggcttga          50
339 <210> SEQ ID NO: 23
340 <211> LENGTH: 107
341 <212> TYPE: DNA
342 <213> ORGANISM: Artificial Sequence
344 <220> FEATURE:
345 <223> OTHER INFORMATION: Description of Combined DNA/RNA Molecule: The n
346       at position 28 is adenosine ribonucleotide.
348 <220> FEATURE:
349 <223> OTHER INFORMATION: Description of Artificial Sequence: oligomer
351 <220> FEATURE:
352 <221> NAME/KEY: misc_feature
353 <222> LOCATION: (49)..(88)
```

Please Note:
**Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220> to
<223> fields of each sequence which presents at least one n or Xaa.**

Input Set : A:\Scr21901.app
Output Set: N:\CRF3\05152001\I423035A.raw

```
L:49   M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:2
L:49   M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:2
L:49   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:78   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:79   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:101  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:117  M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:6
L:117  M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:6
L:117  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:133  M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:7
L:133  M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:7
L:133  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:150  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:202  M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:12
L:202  M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:12
L:202  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:219  M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:13
L:219  M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:13
L:219  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:357  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:358  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:698  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:699  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:721  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:722  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1566 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123
```